

REMARKS

This is filed in response to the non-final Office Action dated November 22, 2008, and is respectfully submitted to be fully responsive to the rejections raised therein. Accordingly, favorable reconsideration on the merits and allowance are respectfully requested.

Claims 1-3 are all the claims pending in the present application.

Rejections

Claims 1 and 2 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 4,711,814 (Teichmann) in view of U.S. Patent 6,811,828 B2 (Takahashi) and further in view of U.S. Patent 5,320,667 (Gesemann).

Claim 3 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Teichmann in view of Takahashi, further in view of Gesemann, and further in view of U.S. Patent 6,838,022 (Khanna).

Particularly, the Examiner's position is that Teichmann allegedly teaches an electroconductive particle that has a gold coating formed over a solid nickel particle by electroless plating method or immersion plating techniques containing potassium gold cyanide.² The Examiner concedes that Teichmann and Takahashi are silent with regards to an ammonium sulfite being a reducing agent. Per the Examiner, Gesemann discloses an electroless gold plating method wherein gold is deposited onto a nickel or nickel alloy films. According to the

² See Office Action dated September 22, 2008, page 3.

Examiner, Gesemann discloses that the gold plating method comprises potassium gold cyanide $\text{KAu}(\text{CN})_2$ and an ammonium sulfite. The Examiner's asserts that it would have been obvious to one of ordinary skill in the art to modify the electroconductive particle of Teichmann by incorporating an ammonium sulfite into the gold plating solution as suggested by Takahashi in view of Gesemann to provide stability to the plating solution.

Traversal

Applicant respectfully traverses and requests reconsideration in view of the following remarks.

Independent claim 1 is directed to an electroconductive fine particle, which has a gold coating formed by electroless gold plating on the surface of a nickel undercoating, the amount of nickel dissolved in a dissolution test of the electroconductive fine particle with nitric acid being 30 to 100 $\mu\text{g/g}$, wherein the electroconductive fine particle is produced by a method comprising forming a gold coating wherein a reducing agent, causing an oxidation reaction on the surface of a nickel undercoating but not causing an oxidation reaction on the surface of gold as a deposited metal, is present on the surface of the nickel undercoating, thereby reducing a gold salt to deposit gold, wherein the reducing agent is ammonium sulfite.

Claim 2 is directed to a method of producing the electroconductive fine particle according to claim 1, wherein the method allows a reducing agent, causing an oxidation reaction on the surface of a nickel undercoating but not causing an oxidation reaction on the surface of gold as a deposited metal, to be present on the surface of the nickel undercoating thereby reduces a gold salt to deposit gold, wherein the reducing agent is ammonium sulfite.

Applicant respectfully submits that the present claimed invention is patentable over Teichmann alone or in combination with Takahashi and Gesemann. Teichmann merely describes as a plating bath, “an Atomex potassium gold cyanide solution obtained from Engelhard Corp.”³ (column 5, lines 12-23). Teichmann fails to teach or suggest the use of an ammonium sulfite as a reducing agent.

The passage in Takahashi that the Examiner relies upon describes “sulfites, thiosulfates, and thiomalates” as a complexing agent in Takahashi.⁴ The reducing agent described in Takahashi is a phenyl compound represented by formula (I)⁵ and not an “ammonium sulfite”.

Gesemann uses 2 baths, a “pre-coating bath” and a “primary bath”, as a technical feature. Column 2, line 14 and column 1 lines 50-51 of Gesemann, upon which the Examiner relies, teaches that “potassium gold cyanide, $\text{KAu}(\text{CN})_2$ ” is a component of the “primary bath” and “ammonium sulfite” is a component of “pre-coating bath”.⁶ Potassium gold cyanide and ammonium sulfite are not used in the same bath. Moreover, Gesemann neither teaches nor suggests the use an “ammonium sulfite” alone or as an agent. Gesemann merely describes the use of ammonium sulfite as a gold salt, for example, “ $(\text{NH}_4)_3\text{Au}(\text{SO}_3)_2$ ” (see Gesemann, Example 2). This gold salt form is not a reducing agent, and therefore does not meet the limitations in the present claims.

³ Teichmann, U.S. 4,711,814 at col. 5, lines 12-23.

⁴ Takahashi, U.S. 6,811,828 at col. 4, lines 1-3.

⁵ Takahashi, U.S. 6,811,828 at col. 4, lines 16-57.

⁶ Gesemann, U.S. 5,320,667 at col. 2, lines 10-17; and col. 1, lines 45-55.

The Examiner's position that the combination of Teichmann, Takahashi and Gesemann renders the present claimed amendment obvious because Teichmann assertedly discloses a gold plating method, Takahashi assertedly discloses the use of sulfites, and Gesemann assertedly discloses the use of ammonium sulfite, is without merit. The "sulfites" described in Takahashi are used as a complexing agent, not a reducing agent. Furthermore, Gesemann only discloses $(\text{NH}_4)_3\text{Au}(\text{SO}_3)_2$ as a gold salt, not a reducing agent. Thus, there does not appear to be any motivation or apparent reason to modify the electroconductive particle in Teichmann to arrive at the presently claimed electroconductive fine particle. Thus, Applicant respectfully submits that it is not obvious from these documents to use "a ammonium sulfite" as a reducing agent for a gold plating bath.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited.

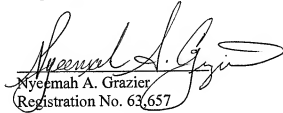
If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

RESPONSE UNDER 37 C.F.R. § 1.111
U.S. Appln. No.: 10/567,461

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The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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